QAPP Worksheet #14 (UFP-QAPP Manual Section 2.8.1) Summary of Project Tasks

Sampling Tasks: Sample collection is planned at two locations in the LPRSA (Tidal River 2 (or RM 4.2) and RM 10.2), and two locations in NBSA (Newark Bay South and Newark Bay Northeast). These locations were chosen to be representative of the various salinity regimes in the LPRSA and NBSA such that the partition coefficients to be derived using these data are representative of low and high salinity gradients in each study area. In addition, one location in each area will be sampled as representative of boundary conditions: above Dundee Dam for LPRSA and at Kill Van Kull for NBSA. Samples will be collected from each location at one depth (mid-water column above Dundee Dam and 3 feet [ft] from the bottom for other stations) to provide a sample representative of the location. Sampling may occur any time during the year, but at flows consistent with the SV CWCM Routine Events (400 – 3,000 cfs at Dundee Dam). These sampling locations will provide data that represent the "normal" flow condition in the river.

The HV sampling will be conducted using a PR2900 sampling system designed by Gravity Environmental. Details of the field sampling methods are provided in the field SOPs (Appendix A). The PR2900 uses a peristaltic pump with Teflon-lined dedicated tubing to draw water through a centrifuge-like vortex solids separation system with a 0.7 um flat laboratory grade glass fiber filter to capture remaining solids. The solids captured in the separation system and the solids on the filter are combined to represent the particulate phase sample. The water is then passed through a PUF sorption medium to capture organic analytes in the filtrate. Flow rates are low (approximately 1.5 L/min) to avoid clogging of the filters and maximize analyte capture (refer to Appendix A, Field SOPs). To meet the ultra-low detection limits required for the HOCs (see Worksheet #15) and collect enough solids from the water column to obtain a sample, it is necessary to sample large volumes of water over several hours.

Non-HOC constituents (POC, DOC and SSC) will be sampled throughout the HOC sampling time duration using the same equipment used during SV CWCM program (see Appendix A). These time weighted-composite samples will be collected into 20 L carboys situated on a magnetic stir plate. At the conclusion of the HV sampling period at each location, a time weighted-composite sample for each non-HOC constituent will be collected from the 20 L carboy using a peristaltic pump and dedicated tubing.

From each location, three samples will be collected: (1) one HV sample of solids separated from the water column to be analyzed for PCBs (congeners and homologs) and PCDD/Fs; (2) one HV sample of sorption medium through which the filtrate has been passed (representative of the apparently dissolved fraction) to be analyzed for PCBs (congeners and homologs) and PCDD/Fs; and (3) one time-weighted composite sample of whole water for analyses of POC, DOC and SSC.

One round of sampling is anticipated to fulfill the objectives of the HV sampling program. Samples from the first HV sampling event will be submitted for rapid turnaround analyses. The CPG will review the HV data and discuss with USEPA, and additional sampling may occur if the objectives of the HV program are not met with one event.

QAPP Worksheet #14 (UFP-QAPP Manual Section 2.8.1) Summary of Project Tasks

Analytical Tasks: The separated solids and sorption medium (PUF) samples will be analyzed for PCB congeners and homologs and PCDD/Fs to characterize the particulate and dissolved phase concentrations of contaminants in surface water, to estimate partition coefficients in the LPRSA and NBSA, and to estimate concentrations in boundary conditions of the LPRSA and NBSA. The time-weighted composite samples will be analyzed for SSC to evaluate concentrations of PCB congeners and homologs and PCDD/Fs in the particulate phase of the water, as well as DOC and POC, to aid in the calculation of the partition coefficients for the CFT model.

QC Tasks: QC samples have been defined for the field and laboratory efforts. Field QC samples are summarized on Worksheet #20; laboratory QC samples are summarized on Worksheet #28.

Secondary Data: All relevant secondary/historical data are summarized on Worksheet #13.

Data Management Tasks: AECOM's DMP (AECOM, 2010b) covers all field-collected and laboratory-generated records/data. The handling of records and data is summarized on Worksheet #29.

Documentation and Records: Project related records (field, sample transfer/chain of custody, laboratory) are summarized on Worksheet #29.

Assessment/Audit Tasks: Field and laboratory audits are scheduled in accordance with Worksheet #31.

Data Review Tasks: Field data will be reviewed as described in Worksheet #34. Laboratories are contractually required to verify all laboratory data including EDDs as summarized in Worksheet #34. Data validation and usability assessments will be conducted as detailed in Worksheets #35, 36, and 37.